

In the Claims

1. (currently amended) An electrochemical gas sensor, comprising:
a substrate having a surface;
a first electrode deposited on said surface;
a second electrode spaced apart from said first electrode and deposited on said surface for detecting a gas;
an electrolytic material in electrical contact with said first electrode and said second electrode for carrying a flow of current; and
said second electrode having a porosity of less than 5%, a pore size less than .12 micrometer at said pore size's greatest measurement, and a thickness less than .2 micrometer for controlling flooding.
2. (currently amended) The electrochemical gas sensor according to claim 1, wherein said porosity is less than 2%.
3. (currently amended) The electrochemical gas sensor according to claim 1, wherein said pore size is less than .05 micrometer at said pore size's greatest measurement.
4. (cancelled)
5. (currently amended) The electrochemical gas sensor according to claim 1, wherein said porosity is less than 1%.

6. (currently amended) The electrochemical gas sensor according to claim 1, wherein said pore size is less than .01 micrometer at said pore size's greatest measurement.
7. (currently amended) The electrochemical gas sensor according to claim 1, wherein said thickness is less than .1 micrometer for deterring flooding.
8. (currently amended) The electrochemical gas sensor according to claim 1, wherein said second electrode has negligible porosity.
9. (currently amended) The electrochemical gas sensor according to claim 1, wherein said second electrode is nonporous.
10. (currently amended) The electrochemical gas sensor according to claim 1, wherein said first electrode is sputter coated.
11. (currently amended) The electrochemical gas sensor according to claim 1, wherein said first electrode is vapor deposited.
12. (currently amended) The electrochemical gas sensor according to claim 1, wherein said second electrode is sputter coated.
13. (currently amended) The electrochemical gas sensor according to claim 1, wherein said second electrode is vapor deposited.
14. (currently amended) The electrochemical gas sensor according to claim 1, further including an acidic solution for hydrating said electrolyte.

15. (currently amended) The electrochemical gas sensor according to claim 1, further including a reservoir for containing a solution to hydrate said electrolyte.

16. (currently amended) The electrochemical gas sensor according to claim 1, wherein each pore of said second electrode is less than .12 micrometer at its greatest measurement.

17. (currently amended) The electrochemical gas sensor according to claim 1, wherein said substrate has a pore less than .05 micrometer at its greatest measurement.

18. (currently amended) The electrochemical gas sensor according to claim 1, wherein said substrate has a pore less than .01 micrometer at its greatest measurement.

19. (currently amended) The electrochemical gas sensor according to claim 1, wherein said surface of said substrate has negligible porosity.

20. (currently amended) The electrochemical gas sensor according to claim 1, wherein said surface of said substrate is generally flat.

21. (currently amended) The electrochemical gas sensor according to claim 1, wherein said surface of said substrate has a porosity of less than 5%.

22. (currently amended) The electrochemical gas sensor according to claim 1, wherein said surface of said substrate has a porosity of less than 2%

23. (currently amended) The electrochemical gas sensor according to claim 1, wherein said surface of said substrate has a porosity of less than 1%.

24. (currently amended) The electrochemical gas sensor according to claim 1, wherein said electrolytic material includes:
an acidic solution for hydrating said electrolyte.

25. (currently amended) The electrochemical gas sensor according to claim 24, wherein said acidic solution is 30% acidic.

26. (currently amended) The electrochemical gas sensor according to claim 24, wherein said acidic solution is 50% acidic.

27. (currently amended) An electrochemical gas sensor, comprising:
a substrate having a surface;
a first electrode deposited on said surface;
a second electrode spaced apart from said first electrode and deposited on said surface for detecting a gas;
an electrolytic material in electrical contact with said first electrode and said second electrode for carrying a flow of current; and
said second electrode having a porosity of less than 5%, a pore size greater than 0 micrometer and less than .12 micrometer, and a thickness less than 1 micrometer for controlling flooding.

28. (currently amended) The electrochemical gas sensor according to claim 27, wherein said pore size is greater than 0 micrometer and less than .05 micrometer at said pore size's greatest measurement.

29. (currently amended) The electrochemical gas sensor according to claim 27, wherein said pore size is greater than 0 micrometer and less than .01 micrometer at said pore size's greatest measurement.